CASE STUDY

CALL RECEPTION IN YEALINK SIP TELEPHONE EXTENSIONS

Description

This document describes the way to setup MEET IP intercom system from FERMAX to communicate with IP YEALINK Telephone by using SIP protocol.

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INTRODUCCIÓN

In this Case Study, it is described the way to integrate MEET IP Intercom with YEALINK SIP telephones.

Despite it is possible to make a phone call to these telephones through a SIP server, in this integration case we will focus in making a call peer to peer directly from the intercom to the telephone, without the need of a SIP server. In case the telephone is registered in a SIP server, it is adviced to review the relative case study of the SIP SERVER in MEET WORKS WITH repository meet.fermax.com

This integration case is focused in the YEALINK TG40 Telephone. With other YEALINK telephones, the process is similar, specially what is related to MEET IP intercom. For more info related to the SIP phone, it is possible to know more at YEALINK SERVICE HUB <u>https://service.YEALINK.com</u>, looking for the FAQ "How To Make Peer-to-Peer IP Calls without a Registrar"

In this case, the configuration to be done will be on a 1 pushbutton MILO MEET intercom panel. Other keypad MEET intercom panels are also compatible with SIP Call.

- VERSIONS USED :
- YEALINK TG40-SIP 10.1.57.14
- MILO MEET 1 pushbutton panel v3.0

Direct call is often used in those cases in which due to proximity reasons, the intercom panel and the phone are in the same LAN network and the SIP server is in the cloud. It is not necessary to have internet access to do the call from the intercom to the phone. In addition, the call is faster and reliable since even in the case the internet access is not available, the call will be produced since intercom and telephone are in the same LAN.

As an additional remark, despite we will focus in making a call to a single SIP phone, the intercom outdoor **panel can call simultaneously several destinations or telephones**, following a similar method.

PRELIMINARY CONSIDERATIONS

Before proceeding to the system configuration, it is required to take into account the following points:

IP intercom panel and telephone addressing:

Both, telephone and intercom, need a fixed IP, in the same local IP network where they are installed. Obviously, these IP addresses must not be used in other IP devices. Can be requested to the network admin. For this case, we will use will the YEALINK ip address 192.168.1.100 and the MEET MILO intercom 192.168.1.51 ip address.

OUTDOOR PANEL INTERCOM SETUP

First of all, all devices should be setup in the same ip network range, as per the selected ip addresses.

We will access to the intercom web server. In the MILO MEET 1 pushbutton panel the default ip address is 10.1.1.2 (in MEET Digital panels with keypad like KIN, MILO, MARINE the default address is 10.1.0.1). We must put the computer network interface in the same range 10.1.1.x

The recommended web browser to use is **Google Chrome**. We will introduce the default IP 10.1.1.2 and the user / password to access. By default **user: admin pass: 123456**.

	D DOOR ENTI	RY SYSTEM	
DEVICE			NETWORK SETTINGS
GENERAL			
NETWORK	IP:	192.168.1.51	
ACC	MASK:	255.255.255.0	
SID	GATEWAY:	192.168.1.1	
	DNS:	8.8.8.8	
SIP TRUNK	SOFTWARE IP:	192.168.1.178	
SIP CALL	SW. PIN:	•••••	
ADVANCED		SAVE	
PINCODE			
RESTORE			

In the NETWORK tab, change the IP to the desired one, in this case 192.168.1.51 and click SAVE. Then we need to change the computer network ip address so that it is in the same network range 192.168.1.x

Now we can access again to the webserver introducing the new ip address 192.168.1.51 in the web browser and we will see again the MILO setup page.

In the GENERAL tab, we will configure that is a 1 single pushbutton panel that calls an apartment (that really do not exist) in the block 1, apartment 101. The pushbutton now is mapped to apartment 101.

It should be selected the TYPE 1W PANEL .

The DEVICE NO will be 1, to indicate that this is the first panel on the installation. If there were more, we will add consecutive numbers.



Now it is required to associate the pushbutton to an IP address or sip extension to call. We will go to SIP CALL tab and map the intercom pushbutton (assigned previously to apartment 101) to an IP address or SIP extension, that will be the **YEALINK** telephone.

In the example, the field APARTMENT will be then 101, and the NUMBER will be the ip call destination, that in this case will be a sip call to ip address 192.168.1.100, assigned to YEALINK telephone. The syntaxis to be used is the following: <u>sip:192.168.14.1</u>

	AX O DOOR ENT	TRY SYST	EM			
DEVICE					SIP CALL	SETTINGS
GENERAL	-					
NETWORK	APARTMENT:	101				
ACC	NUMBER:	sip:192.168.1	.100			
SIP	DELETE:	SAV/E				
SIP TRUNK		SIVE				
SIP CALL	APARTMENT	NUMBER	APARTMENT	NUMBER	APARTMEN	T NUMBER
ADVANCED	101 si	ip:192.168.1.100				
PINCODE						
RESTORE						

REMARK: These telephones are SIP, so they can be also registered as an extension of a SIP server. If that was the case, and assuming that the server ip would be 192.168.1.199 and the phone extension registered 1122, the call destination to be used would be then sip:1122@192.168.1.199. Where this syntaxis corresponds to sip:sip_extension@server_ip_address

YEALINK SIP TELEPHONE CONFIGURATION

The YEALINK SIP telephone comes with its default ip.

We need to set the ip address in the desired address (in this case 192.168.1.100). This telephone also has a webserver embedded, so we will connect to it using the same web browser Google Chrome. To access we will use the credentials **user: admin pass: admin**

Vealink	Log Out Default password is in use. Please change! English (English)								
	Status Account	Network	Dsskey	Features	Settings	Directory	Security	Applications	
Status	Version						NOTE		
Status	Firmware Version		76.84 <mark>.16</mark> 0.	2			Version		
	Hardware Version		76.0.0. <mark>20</mark> 8	.0.0.0			It shows the f	firmware version version.	
	Device Certificate						Network		
	Device Certificate		Factory Ins	stalled			It shows the r	network settings of N) port.	
	Network						Account	, p	
	Internet Port		IPv4				It shows the r	registration status	
	IPv4						or our decourt		
	WAN Port Type		Static IP				Click her	e to get more	
	WAN IP Address		192.168.1.	100			product docu	iments.	
	Subnet Mask		255.255.25	55.0					
	Galeway		192.168.1.	1					
	Primary DNS		8.8.8.8						
	Secondary DNS								
	Network Common								
	MAC Address		80:5E:0C:2	20:F0:6E					
	VLAN ID		0						
	WAN Port Status		100Mbps F	ull Duplex					
	PC Port Status		Link Down						
	Device Type		Bridge						
	Uptime		0 days 01:	11					
	Current Time		01:11:06 0)3-Jul-23					
	Account Status								
	Account 1		Disabled						
	Account 2		Disabled						
	Account 3		Disabled						

Vealink	Log Out									
	Status Account	Network	Dsskey	Features	Settings	Directory	Security	Applications		
Basic	Internet Port						NOTE	ſ		
Basic PC Port NAT Advanced Diagnostics	Mode (IPv4/IPv6) IPv4 Config DHCP Static IP Address IP Address Subnet Mask Default Gateway Static DNS Primary DNS Secondary DNS IPv6 Config DHCP Static IP Address IPv6 Prefix (0~128 Default Gateway IPv6 Static DNS	3)	192.168 255.255 192.168 © On 8.8.8.8	1.100 255.0 1.1 0 Off			DHCP DHCP (Dynar Configuration network proto dynamically a parameters to Static IP Ad Specifies the of IP phones It allows user common DSL Internet. INV 6 Suppo IPV6 is devel the long-antit IPV4 address	nic Host Protocol)is a bool used to illocate network o IP phones. Idress network parameter manually. Is to share a connection to the rt pated problem of exhaustion. In the problem of exhaustion.		

As default, YEALINK telephones do not receive direct calls from other SIP devices, so that we need to enable this feature in the menu

FEATURES → tab GENERAL INFORMATION

in the option

ACCEPT SIP TRUST SERVER ONLY → Disabled

The screens where to setup the YEALINK parameters are the following:

				And	aulteranned is in use. Di		Log Out
Yealink 140G		~			aut password is in use. Pic		nglish (English) 🗸
	Status Account	Network	Dsskey Fea	tures Se	ttings Directory	Security	Applications
	General Informa	tion				NOTE	
Forward&DND	Call Waiting		Enabled	~		0.11.11.11	
General	Auto Redial		Disabled	~		It allows IP p	g phones to receive a
Information	Auto Redial Int	erval (1~300s)	10			already an ac	g call when there is ctive call.
Audio	Auto Redial Tin	nes (1~300)	10	0		Auto Redia	I
Intercom	Key As Send		#	~		It allows IP p automatically	hones to redial a busy
Transfer	Reserve # in U	lser Name	Disabled	~		number after	the first attempt.
Distance 0 Davis	Hotline Number	r				Assign '#' or'	d '*'as the send key.
РІСК ЦР & РАГК	Hotline Delay (/	0~10s)	4			Hotline	
Remote Control	Busy Tone Dela	ay (Seconds)	0	~		IP phone will out the hotlin	automatically dial
Phone Lock	Return Code W	/hen Refuse	486 (Busy Here)	~		speakerphon	ndset, pressing the e key or the line key.
ACD	Return Code W	/hen No Answer	486 (Busy Here)	~		Call Comple	etion
CHIC	Return Code W	/hen DND	480 (Temporarily	Unavail: 🗸		It allows use busy party ar	nd establish a call as
5145	Call Completion	n	Disabled	~		available to r	eceive a call.
Action URL	Time Out for D	ial Now Rule	1			-	
Power LED	RFC 2543 Hold		Disabled	~		Click he product doc	re to get more uments.
Notification Popups	Use Outbound	Proxy In Dialog	Enabled	~			
	180 Ring Worka	around	Enabled	~			
	Logon Wizard		Disabled	~			
	PswPrefix						
	PswLength						
	PswDial		Disabled	~			
	Save Call Log		Enabled	~			
	Suppress DTMF	F Display	Disabled	~			
	Suppress DTMF	F Display Delay	Disabled	~			
	Play Local DTM	IF Tone	Enabled	~			
	DTMF Repetitio	on	3	~			
	Multicast Codeo	c	G722	~			
	Play Hold Tone		Enabled	~			
	Play Hold Tone	Delay	30				
	Hold Tone Inter	rval (second)	30				
	Play Held Tone		Disabled	~			
	Play Held Tone	Delay	30				
	Held Tone Inter	rval (second)	60				

Save Call Log	Enabled ~]	
Suppress DTMF Display	Disabled ~]	
Suppress DTMF Display Delay	Disabled ~]	
Play Local DTMF Tone	Enabled ~]	
DTMF Repetition	3 🗸]	
Multicast Codec	G722 🗸]	
Play Hold Tone	Enabled ~]	
Play Hold Tone Delay	30]	
Hold Tone Interval (second)	30]	
Play Held Tone	Disabled]	
Play Held Tone Delay	30]	
Held Tone Interval (second)	60]	
Allow Mute	Enabled 🗸]	
Dual Headset	Disabled ~]	
Auto Answer Delay	1]	
Enable Auto Answer Tone	Enabled ~]	
Headset Prior	Disabled ~]	
DTMF Replace Tran	Disabled ~]	
Tran Send DTMF]	
Send Pound Key	Disabled]	
Fwd International	Enabled ~]	
Diversion/History-Info	Enabled ~]	
BLF LED Mode	0 ~]	
Auto Logout Time (1~1000min)	5]	
Call Number Filter	, -()		
Use Logo	Off 🗸		
Accept SIP Trust Server Only	Disabled ~		
Allow IP Call	Enabled 🗸]	
IP Direct Auto Answer	Disabled ~		
Call List Show Number	Name 🗸]	
Voice Mail Tone	Disabled ~		
DHCP Hostname	SIP-T40G		
Reboot in Talking	Disabled 🗸		
Hide Feature Access Codes	Disabled 🗸		
Display Method on Dialing	User Name 🗸		
Auto Linekeys	Disabled 🗸		
BLF Notify via TCP	Disabled 🗸		
	Concel		
Confirm	Cancei		

It is convenient to confirm that the MEET compatible codecs are selected. We can do it on the SIP screen. Main codecs are PCMU and PCMA.

Yealink	Log Out									
	Status	Account	Network	Dsskey	Features	Settings	Directory	Security	Applications	
Register		Account		Account	1	~		NOTE		
Register Basic Codec Advanced	Auc	lio Codecs Disable Codecs ILBC_15_2kbps G726-16 G726-32 G726-32 G726-40 Opus ILBC_13_33kbps	Confirm	Enat PCW R G72 ←	le Codecs A 9 2 Cancel			Audio Code The audio co should be su server. During the co offers the en list to the se server uses t negotiated w according to Click he product door	ecs dec to be used pported by the SIP all, the IP phone habled audio codec rver, and then the the audio codec with the called party the priority. ere to get more suments.	

With the previous configuration we can make a call from the intercom panel to the telephone.

The door lock release can be done using either "*" or "#" from the telephone keypad, during the call.

VIDEO

Currently YEALINK telephones on this case study do not allow video H.264 reception, which is the video sent by MEET FERMAX intercom panels. It is required to get an DOORPHONE INTEGRATION compatible YEALINK telephone that accepts H.264 video stream reception. Some of the telephones that are compatible with this feature are T58W or T57W.

ADVANCED FUNCTIONS

It is possible to call from the telephone to the panel. For that reason, it is quite useful to setup a direct access on the telephone. In particular, YEALINK TG40 allows to have direct accesses on the auxiliar display.

Additionally, for more usability, it is possible to set up a function key labeled to open the door, in this way even staff that is not familiar with the telephone will be able to identify the way to open the door.



For that it is recommended that a direct access is added to the directory menu.

Veglink					A Default password is in use. Please change! English (Engl						
TC GIIII K I 140G	Status	Account	Network	Dsskey	Features	Settin	gs	Directory	Security	Applications	
Line Key	Кеу	Туре		Value	Label	Line		Extension	NOTE	<u> </u>	
Programable Key	Line Key1 Line Key2 Line Key3	Intercom DTMF	 192.168.1 * * 	.51	Door Open	Line1	~		Key Type The free fund Speed Dial, K	tion key 'Types' ey Event, Intercom.	
	Line Key3	N/A	Confirm		Cancel] N/A	v		Key Event Key events a shortcuts to p functions. Intercom Enable the 'In it is useful in environment connect to th secretary. Click hee product doc	re predefined ohone and call ntercom' mode and an office as a quick access to e operator or the re to get more uments.	

To label properly and assign the functionality to the quick access function keys, we will access the "Dsskey" and set it up the desired keys.

To call the outdoor intercom panel we will choose

Type: Intercom Value: 192.168.1.51 Label:Door Line: Line1

Where "Value" is the IP of the intercom and "Label" is the text we want to be shown in the function key display.

To open the door lock during the call we will choos

Type: DTMF Value:* Label: Open Line

Where "Value" is the DTMF tone to open the door, that in MEET can be "*" or "#" to active the relay in the intercom panel. In case there is a secondary relay module connected to the panel, then this additional relay can be opened using "0" number. "Label" is the text we want to be shown in the function display.